

5(3)

AUTHORS: Pushkareva, Z. V., Latosh, N. I.

SOV/ 20-123-4-35/53

TITLE: Diacyl Derivatives of Phenyl Hydrazine (Diatsilproizvodnyye fenilgidrazina) On the Problem of the Relation Between the Chemical Structure and the Analgesic Effect (K voprosu vzaimosvyazi khimicheskogo stroyeniya i anal'geziruyushchego deystviya)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 123, Nr 4, pp 700 - 703 (USSR)

ABSTRACT: The anodynes (anaesthetics) used in modern medicine, such as antipyrine and pyramidon, unfortunately have a harmful side effect on the human organism. The experiments for the production of pyramidon-N-oxide in 1929 (Ref 5) caused the authors to synthesize the derivatives (of phenyl hydrazine of ~~the~~ complete formula III) mentioned in the title. The aim of this work was to find some less toxic products such as the dioxy pyramidon (II) which was unexpectedly produced in the place of the N-oxide of pyramidon. The first group of the obtained simple substances consisted of "skeleton substances". Their R_1 , R_2 , and R_3 were

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were methyl and phenyl radicals in all possible combinations:

Diacyl Derivatives of Phenyl Hydrazine. On the Problem of SOV/20-123-4-35/53
the Relation Between the Chemical Structure and the Analgesic Effect

(IV) to (IX). By their means the effect of the relatively simple structural transformations in the α - and β -acyl radicals of phenyl hydrazine on the properties of the molecules could be traced. Furthermore, various substituents were introduced into the nucleus of the benzoyl radical (R_2) of the second group (derivatives of α -benzoyl- β -acetyl- β -methyl-phenyl hydrazine (VIII)). A number of substances were formed which were structurally related to the benzoyl radical (complete formula (X)), namely from (XI) to (XIII). As there was no benzoyl derivative with electron acceptor substituent in the nucleus the α -isonicotyl- β -acetyl- β -methyl-phenyl hydrazine (XIV) was synthesized. The compounds (XV) and (XVI) were obtained supplementary on the second group. The α -acyl radical also contained the phenyl radical, however, it was not directly connected with the carbonyl group but separated from it. In (XVI) the separating group was a head of the conjugation ($-\text{CH}=\text{CH}-$), in (XV) it broke the conjugation chain ($-\text{CH}_2-$). The substance (XV) is something like a partly hydrated dioxy pyrimidon (II) and in the α -position contains a dialkyl amino acetyl radical instead of an oxamide residue. Phenyl hydrazine or hydrazo benzene served for all

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Diacyl Derivatives of Phenyl Hydrazine. On the Problem of SOV/20-123-4-35/53
the Relation Between the Chemical Structure and the Analgesic Effect

these syntheses as initial materials. From them the further materials were produced according to schemes (I) and (II). Dioxy pyramidon is difficult to crystallize (Refs 5,6). This is correct for all synthesized diacyl derivatives to a higher or lower degree, whereas the monoacyl products ((XVIII) and others) were easily crystallized and purified. For this reason the second scheme (II) was employed in the syntheses. The optimum conditions of a partial deacylation (Ref 7) were investigated. They made it possible to produce (XVIII) in a yield of 85-86%. Table 1 gives the properties of the hitherto undescribed synthetic substances. The physico-chemical properties were separately published. The analgesic effect is studied at the Sverdlovskiy gosudarstvennyy meditsinskiy institut, kafedra farmakologii (Sverdlovsk State Medical Institute, Chair of Pharmacology). According to the results available (Ref 12) the substances of the type (X) are the best. There are 1 table and 12 references, 2 of which are Soviet.

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Diacyl Derivatives of Phenyl Hydrazine. On the Problem of SOV/20-123-4-35/53
the Relation Between the Chemical Structure and the Analgesic Effect

ASSOCIATION: Ural'skiy politekhnicheskiy institut im. S. M. Kirova (Ural
Polytechnical Institute imeni S. M. Kirov)

PRESENTED: November 20, 1956, by I. N. Nazarov, Academician

SUBMITTED: October 12, 1958

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LATOSH, N.I., Cand Chem Sci -- (diss) "Study of a number of
diacyl derivatives of hydrazine, ⁶⁰on the problem of the inter-
relation ^{between} ~~of~~ chemical structure and analgesic^s action)." Sverdlovsk,
1959, 17 pp with graphs (Min of higher Education USSR. Ural
Polytechnical Inst in S.M. Kirov) 150 copies (KL, 28-59, 123)

5(3)

AUTHORS: Latosh, N. I., Pushkareva, Z. V.

SOV/20-124-1-27/69

TITLE: Chemical Structure and Some Properties of Diacyl Derivatives of Phenylhydrazine (Khimicheskoye stroyeniye i nekotoryye svoystva diatsilproizvodnykh fenilgidrazina)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 124, Nr 1, pp 98 - 101 (USSR)

ABSTRACT: The authors described derivatives of the type mentioned in the title with a total formula (I) (Ref 1). They are analogous to the analgesic dioxy-pyramidon (II) which is less toxic than pyramidon but not inferior as to the analgesic effect. In addition to pharmacological investigations the authors determined the absorption spectra in the ultraviolet region and the dipole moments of the substances synthesized. From these spectra of the mono and diacyl hydrazines (R_1 being both substituted on the β -nitrogen atom and not substituted) the influence of various radicals R_1 , R_2 and R_3 upon the electronic structure of the molecules as a whole could be recognized. The spectra of 30 substances, 22 of which for the first time,

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Chemical Structure and Some Properties of Diacyl
Derivatives of Phenylhydrazine

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were taken. It can be seen from figure 1 that the spectrum of the non-substituted hydrazine (Curve 1) does not differ from that of aniline (Curve 2) as to the shape of the curve. The second maximum of the phenylhydrazine, however, is shifted by 6 mμ in the direction of the long waves. The introduction of an acetyl group near the β-nitrogen atom exerts but little influence on the optical properties of the molecule (Curve 3). An acetyl on the α-nitrogen atom, on the other hand, causes a considerable variation of the spectrum (Curve 5), as compared with the non-substituted phenylhydrazine. The absorption maximum for α-acetyl-phenylhydrazine lies within the same region as that for acetanilide (Curve 4) and differs by the intensity only. In the case of the α,β-diacyl hydrazines the character of the ultraviolet spectrum depends considerably on the chemical structure of the R₂-radical in the α-acyl radical (Fig 2). If substituents occur in the α-acyl radical which are combined with the carbonyl by "conductors" of the conjugation, the spectrum is thoroughly changed (Curves 4,5). It may be said that the spectra of the various derivatives under review are in a similar relation with one another as

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the spectra of the acid anilides corresponding to the α -acyl radicals. The resemblance of the anilide spectrum to that of the corresponding diacyl-phenylhydrazine is then the most pronounced if a considerable conjugation effect is manifested in the α -acyl-radical. It can be seen from table 4 that not only the introduction of an acyl radical in the neighborhood of the β -nitrogen atom, but also that of a methyl or phenyl radical changes but little the optical properties of the molecule. Since the characteristic of the polarity of the derivatives can be important for the relation of the chemical structure with the analgesic activity, the dipole moments of the substances in question were determined. Similar values of these moments at quite different structure of the acid radicals can be seen from table 1. The authors express some suppositions for the interpretation of this phenomenon. There are 4 figures 1 table, and 7 references, 3 of which are Soviet.

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Chemical Structure and Some Properties of Diacyl
Derivatives of Phenylhydrazine

SOV/20-124-1-27/69

ASSOCIATION: Ural'skiy politekhnicheskiy institut im. S. M. Kirova
(Ural Polytechnic Institute imeni S. M. Kirov)

PRESENTED: November 20, 1956, by I. N. Nazarov, Academician

SUBMITTED: October 12, 1956

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KAZARINOVA, N.F.; LATOSH, N.I.; POSTOVSKIY, I.Ya.

Investigating the complexons of amino acid derivatives. ^{Izv.Sib.}
otd.AN SSSR no.2:60-70 '60. (MIRA 13:6)

1. Ural'skiy filial AN SSSR.
(Complexons)

(Amino acids)

L.Tosh,

N.I.

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5/020/60/152/01/37/064
B011/B126

AUTHORS: Postovskiy, I. Ya., Kasarinova, N. P., Afanas'yeva, G. B., Latosh,
N. I.

TITLE: New Esters of Dithiocarbamic Acids¹

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 132, No. 1, pp. 141-144

TEXT: In the publications data on the protective effect of antiradon (AET, β -aminoethyl isothiuronium bromide (I)) against ionizing radiation have appeared (Refs. 1, 2). Thus, the authors tried to synthesize compounds with a similar structure, namely, β -aminoethyl dithiocarbamates (II). They have produced new carbamates with a non-substituted amino group (IV, V, VI). They are formed by the reaction of β -chloroethylamine with sodium salts of the relevant dithiocarbamic acids (sodium diethyl dithiocarbamate, -tetramethylene dithiocarbamate, and pentamethylene dithiocarbamate). The reaction products were obtained as easily crystallisable hydrochlorides (Table 1). By using the known reaction between amines and quinones, the authors have synthesized new derivatives of benzo- and naphthoquinone (VII-XIV) (see scheme). These types of compound have recently become recognized as physiologically active, and as new synthetic drugs, amongst

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other things as antibacterial and antigrowth mediums. The benzoquinone derivatives (VII-IX) and the naphthoquinone derivatives (X-XIV) contain β -aminoethyl-dithiocarbamate residues, and easily form on the interaction of free amines (IV, V, VI) with quinones in an ethereal solution. They are red, readily crystallising, not easily soluble substances (Table 2). There are 3 tables and 6 references, 1 of which is Soviet.

ASSOCIATION: Institut khimii Ural'skogo filiala Akademii nauk SSSR (Institute of Chemistry of the Ural Branch of the Academy of Sciences, USSR)

PRESENTED: January 17, 1960, by B. A. Kasanskiy, Academician

SUBMITTED: December 21, 1959

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POSTOVSKIY, I.Ya.; KAZARINOVA, N.F.; AFANAS'YEVA, G.B.; LATOSH, N.I.

β -Aminoethyl diethyldithiocarbamate. Zhur. VKHO 5 no.1:113
'60. (MIRA 14:4)

1. Ural'skiy filial AN SSSR, Institut khimii.
(Carbamic acid)

LATOSZEK, JAN

Poland/Chemical Technology - Chemical Products and Their Application. Electro-chemical Manufacturing. Electrodeposition. Chemical Sources of Electrical Current, I-8

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 62204

Author: Szmidt, Konrad; Kolanko, Zdzislaw; Latoszek, Jan

Institution: None

Title: Regeneration of Nickel Electrolytes

Original

Periodical: Regeneracja zuzytych niklowych kapieli galwanicznych, Prace inst. mech., 1955, 5, No 15, 36-40; Polish; Russian and French resumes

Abstract: For the regeneration of contaminated Ni-electrolytes it is recommended to treat them with 0.7 N NH_4OH to a pH 6.6; this removes all the impurities except 0.012% Zn which does not interfere with subsequent use. Further treatment of the solution by passing it over sulfonated coal permits to remove considerable amounts of NH_4^+ and Cl^- , but the amount of Zn^{2+} remains almost unchanged. Further alkalization of the solution to pH 6.85 removes almost all of the

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Poland/Chemical Technology - Chemical Products and Their Application. Electro-chemical Manufacturing. Electrodeposition. Chemical Sources of Electrical Current, I-8

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 62204

Abstract: Zn but also causes precipitation of Ni-salt in an amount up to 26% (recomputed on metallic Ni). The purified solution acidified after removal of the precipitate to pH 5.5 is a fully adequate electrolyte. There are presented precipitation curves of metal hydroxides with NH_3 solutions of different concentrations (0.7-7 N).

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LATOUR A.

POL. 4

Latour A. Investigations over the Procedure of Heat Treatment of High Speed Steels

„Badania nad doborem warunków obróbki cieplnej brajowych stali szybkołączących”. (Prace Gl. Inst. Mechan. No. 1), Warszawa, 1950, Gl. Inst. Mechan. 8 pp., 10 figs., 4 tabs.

Investigations over the selection of the procedure for heat treatment of home produced high speed steels has established that: 1) features of hardened materials and the hardness at room temperature are insufficient criteria for determining the appropriate selection of temperatures for hardening of high speed steels, and for controlling the hardening process; a complementary examination of the microstructure of steel should be carried out; 2) the temperature range for high alloy SW18 steel is higher than the temperature range for low alloy SL5 and SW3 steels; 3) high speed steels, hardened at admissible high temperatures, have a higher tempering temperature than high speed steels hardened at lower temperatures, and after tempering at approximate temperatures their hardness is higher than or at least equal to the hardness after quenching. This property is one criteria for checking the suitability of the heat treatment applied; 4) when submitted to tempering at a temperature range 350-450°C a decrease of hardness, most remarkable in low alloy steel of SV3 type, is observed in high speed steels; 5) cutting speeds of steels of L35 type are equal to, or slightly higher than the cutting speeds of SW18 steels. In this respect, average values for SV3 steels are a few points per cent lower than those for SW18 steels.

LATOUR, A.

3797

021.79:621.319.5

Latour A, Jurko W. Performance of Cutting Tools Hardened by ^{A₂A}
Electric Spark Process.

„Wydajność narzędzi skrawających utwardzonych elektroiskrowo”.
Mechanik. No. 4, 1954, pp. 131—135, 6 figs., 1 tab.

Experiments with a view to determining the quality of hardened and not hardened cutting tools were carried out at the Metal Working Institute of the Warsaw Polytechnic. These experiments were performed on Polish made cutting tools of wolfram high-speed steel, class SW18. The tools were hardened by an electric spark process, the influence of heat treatment being taken into account. It was ascertained that the electric spark hardening increases the cutting power of both high speed steel tools and other tools operating under similar conditions. The experiments proved that tools hardened by this process have an average increase of 20% in cutting performance and 1.5 to 3.5 times longer life. It was also ascertained that appropriate heat treatment is the main requirement in improving quality and lengthening the life of high speed steel cutting tools.

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MET

L'ATOUR, A.

"The Problem of Popularization of High-Quality Metal Treatment", p. 162,
(MECHANIK, Vol. 27, No. 5, May 1954, Warszawa, Poland)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 5,
May 1955, Uncl.

LATOUR, A.

Role and the tasks of factory groups of the Association of Polish Engineers and Technicians in the field of technical development and progress. P. 252. (PRZEGLAD TECHNICZNY, Vol. 75, No. 7, July 1954, Warszawa, Poland)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 3, No. 12, Dec. 1954, Uncl.

LATOUR, A.

The problem of machining in Hungary. p. 180.

MECHANKI. (Stowarzyszenie Inzynierow i Technikow Mechanikow Polskich)
Warszawa, Poland. Vol. 32, no. 4, April 1959.

Monthly List of European Accessions (EEAI) LC, Vol. 8, no. 8
August 1959.

Uncl.

LATOUR, A.

The resistance of steel to cutting as influenced by heat-treatment.
p. 422

MECHANIK Warszawa, Poland Vol. 32, no. 8, Aug. 1959

Monthly List of East European Accessions (EEAI) LCC, Vol. 9, no. 2,
Feb. 1960
Uncl.

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26476

P/008/60/000/002/003/003
A107/A126

AUTHOR: Szulc, Stanisław, Professor, Latour, Andrzej, Doctor of Engineering,
and Zúunek, Bogusław, Engineer

TITLE: Surface smoothness of machined heat resistant Nimonic 80 alloy

PERIODICAL: Technika Lotnicza, no. 2, 1960, 44 - 52

TEXT: The article deals with investigations of this problem with respect to production of turbine engines, carried out by the Katedra Wytwarzania Silników Lotniczych PW (Department of Aircraft Engine Construction of the Warsaw Polytechnic). The machinability of Nimonic 80 depends on its hardness and elasticity and is influenced by the "softening" (Wyplyw) phenomenon, caused by high temperatures, described by B. N. Ilyin [Ref. 1: Cutting Properties of Austenitic Steels]. Requirements for a successful machining of Nimonic 80 are: high stiffness of machines and tools, accurate distance between tool and workpiece; cutting speed not overpassing 10 m/min; exact surface of tool and suitable cooling. Tests were carried out on Nimonic 80, heat treated at 1,080°C during 8 h, aged at 710°C during 16 h and cooled at room temperature. The mean mechanical properties of the test piece were: $H_B \approx 290$, $R_T \approx 107 \text{ kg/mm}^2$, $Q_T \approx 72 \text{ kg/mm}^2$, $a_5 = 24.5\%$, $c = 23\%$. The

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A107/A126

Surface smoothness of machined heat resistant...

smoothness was checked by a Schmal-Linnik microscope and the line average (CIA) by a Taylor-Hobson profilometer. Tests have been performed under following conditions: The cutting head was made of SW 18 steel, angle of inclination $\alpha = 8^\circ$, angle of rotation $\gamma = 5 \div 25^\circ$, angle of tool $\chi = 25 \div 75^\circ$, $\chi_p = 0 \div 30^\circ$, reduced tool edge $r = 0.5 \div 5$ mm. The TOS FA8V milling head was made of SW18 steel, angle of inclination $\alpha_u = 12^\circ$, angle of rotation $\gamma_u = 20^\circ$, angle of tool $\chi_u = 30^\circ$, $\chi_p = 10^\circ$, reduced tool edge $r = 0.5, 1, 2, 3, 4$ mm. The PSH24 grinding wheel driven by a 2 hp electromotor was furnished with 8 various grinding disks of $\phi 250 \times \phi 60 \times 20$ size, made of carborundum or corundum and developed in the Laboratorium Centralnego Biura Konstrukcji Narzędzi (Central Laboratory of the Construction Office of Tools) in Grodzisk. Conclusions: The highest smoothness, classified with 7 and 8 at cutting and milling and 9 and 10 at grinding have been achieved at following angles: $\alpha = 8 - 10^\circ$, $\gamma = 15^\circ$, $\chi = 45^\circ$, $\chi_p = 5 - 10^\circ$, $r = 3 - 4$ mm, $\lambda = 4^\circ$; at a grinding depth $g = 2 - 2.5$ mm transmission $p = 0.13 - 0.19$ mm per turn, turning speed $v = 9 - 10$ mpsec using a cooling agent of 10% emulsion of oil emulgator E. There are 20 figures and 11 references: 8 Soviet-bloc and 3 non-Soviet-bloc. The references to the English-language publications read as follows: Research throws light on machining Nimonic and Titanium-Metalworking Production, IV/56. High Temperature Alloys - Air Force Machinability Report - The Iron Age, 7/54. Machining the Nimonic Series of Alloys-Machinery XII/49.

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27224
H/011/60/000/005/002/002
A054/A126

AUTHOR: Latour, Andrzej, Doctor of Engineering

TITLE: Analysis of cooling-lubricating oils used for hard-cutting materials

PERIODICAL: Gép, no. 5, 1960, 187 - 191

TEXT: Cooling-lubricating oils, applied to steels and alloys which are difficult to machine, such as Nimonic 80 ($\sigma_B = 107$ kg/sq mm, $\sigma_F = 72$ kg/sq mm, $\sigma_5 = 25\%$, $\psi = 23\%$, HB = 290 kg/sq mm) must have a great surface activity and strong cooling effect, because the Nimonic 80 alloys can be machined only with high-speed steel tools. In order to find a suitable lubricating oil for these alloys, tests were carried out in the Aircraft Engines Section of the Warsaw Polytechnical Institute and in the Factory of Transport Facilities with various sulfur-containing oils, to study the relation between speed, feed and durability of the cutting edge, when lubricating Nimonic 80 alloys with oils containing and not-containing sulfur; to determine the optimum sulfur-content of the lubricant and to establish the technology of sulfur-containing oils. The tests were carried out partly in laboratories to define the relation between the behaviour of cutting tool and various lubricants, and partly on an industrial scale. The investigations

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A054/A126

Analysis of cooling-lubricating oils used for ...

covered mainly the SM1 refined oil, containing vegetable and mineral oil elements, and the W5 spindle oil; the latter with and without sulfur added. The test-oils had the following S-content: SM1 - 0%; SM1 - 0.3%S; W5 - 0%; W5 with 0.1%, 0.2%, 0.3%, 0.5%, 1% and 1.5%S. In one series of experiments, of which the main object was to observe the effect of the sulfur content of the lubricating agent, the cutting speed, feed and depth of cutting were fixed ($v = 8.7$ m/min, feed: 0.19 mm/rev, and cutting depth: 1 mm). These tests proved the superiority of sulfur-containing lubricants (W5) even to the best quality of SM1 type oils. The W5 + 0.5%S lubricant has the following characteristics: viscosity, E^0 : 9.02; water content: 0; reaction of aqueous solution: neutral; inflammation point: 150°C. Besides raising the durability of the cutting tool edge and the productivity of the machine, sulfur-containing lubricants are much cheaper than the conventional ones. From 1 kg concentrate 20 kg of W5 + 0.5%S spindle oil can be obtained, which costs 58.3 Złoty, whereas the cost of the same quantity of SM1 oil is 116 Złoty. [Abstracter's note: Translated from Polish by László Dobor]. There are 6 figures 2 tables and 9 references: 6 Soviet-bloc and 3 non-Soviet-bloc. The references to the English-language publication read as follows: (Ref. 7: Research throws light on machining Nimonic and Titanium Metalworking Product IV/56); (Ref. 8: P. G. machining the Nimonic series of alloys - Machinery dec. 1/49). ASSOCIATION: Politechnika Warszawska (The Warsaw Polytechnical Institute)

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LATOUR, Andrzej, dr., inz.; MARCINIAK, Mieczyslaw, mgr., inz.

Effectiveness of sulfur emulsions and of emulsions with addition of molybdenum sulphide as coolants for metal cutting. Mechanik 34 no.12:614-615 '61.

1. Politechnika Warszawska. 2. Członek Komitetu Redakcyjnego "Mechanik" (for Marciniak).

(Metal cutting) (Molybdenum)

LATOUR, Andrzej, dr.,inz.; MARCINIAK, Mieczyslaw, mgr.inz.

Efficiency of coolants in metal cutting fluids containing sulphur
additives and molybdenum disulphide. Mechanik 34 no.1:29-31 '62.

1. Politechnika Warszawska.

S/123/52/000/013/012/021
A004/A101

AUTHORS: Latour, Andrzej, Marciniak, Mieczyslaw

TITLE: The efficiency of using sulfurous emulsions and emulsions with molybdenum disulfide additions

PERIODICAL: Referativnyy zhurnal, Mashinostroyeniye, no. 13, 1962, 57, abstract 13B335 ("Mechanik", 1961, v. 34, no. 12, 614 - 616; 1962, v. 35, no. 1, 29 - 31, Polish)

TEXT: At the Warsaw Polytechnic Institute three kinds of cutting fluids have been tested in drilling grade 65 carbon steel, turning the steel grades 18 XHBA (18KhNVA) and 20 XPCA (20KhGSA) and milling and turning heat-resistant steels: ordinary water-oil fluid, water-oil fluid with molybdenum disulfide additions, water-oil fluid with sulfur additions and a paste for the direct lubrication of the tool cutting edge. In drilling the best results were obtained in using an emulsion with 0.5% MoS₂ addition of Messr. Moly Paul (England) with simultaneous lubrication of the cutting edge with a paste. The tool life increased by a factor of 2.5 compared to the usual one. The results in turning are iden-

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S/123/62/000/013/012/021

A004/A101

The efficiency of...

tical with those mentioned above. The tool life was increased by a factor of 3. The cutting speed magnitude during one-hour tool life, characterizing the cooling efficiency, amounts to $v_{60} = 42$ m/min for the emulsion with 0.5% MoS_2 and to $v_{60} = 34$ m/min for the ordinary emulsion. Using the sulfurous emulsion, the cutting speed grows by 15% during 1-hour tool life. When the laboratory tests were checked in production, the tool life increased up to a factor of 2 if cooling was effected with an emulsion with a MoS_2 addition. There are 7 figures and 3 tables.

D. Kopeykin

[Abstracter's note: Complete translation]

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LATOUR, Andrzej, dr. inz.; MARCINIAK, Mieczyslaw, mgr. inz.

Use of radioisotopes in research on the machinability of metals and the cutting properties of tools made of sintered carbides. Mechanik 35 no.8:430-434 Ag '62.

1. Politechnika, Warszawa.

LATOUR, Andrzej, dr inz.

Influence of chemical composition and structure upon the
machinability of steel. Mechanik 35 no.9:491-495 '62.

1. Politechnika, Warszawa.

LATOUR, A.

"Low-friction lubricants in industry" by Tibor Petrys,
Roman Sniechowski. Reviewed by A. Latour. Mechanik
36 no.6:286 Je '63.

LATOUR H.

621.315.614.64 : 621.314.2.048
✓ 4117. On the impregnation with oil-resistant
glyptal lacquers of transformer insulation paper.
H. LATOUR AND J. GZYLEWSKI. *Przegląd elektrotech.*,
31, No. 2-3, 172-7 (1955) in Polish.
Deals with the methods of impregnating windings
with glyptal lacquers and the criteria to be observed
in determining the parameters of impregnating
processes. The structure of oil-resistible glyptal
lacquers is reviewed in more detail. The procedure
in impregnating paper in vacuum and at atmospheric
pressure with lacquers, particularly with Polish-made
glyptal lacquer, is reviewed. The results of testing
the properties of test samples so impregnated are
given.
M. W. MAKOWSKI

2 May
NA BE
①

ACCESSION NR: AP4017876

P/0021/64/000/002/0106/0109

AUTHOR: Latour, H. (Master of engineering); Nieroda B. (Master of engineering)

TITLE: Domestic varnish products for magnetic sheet steels

SOURCE: Przegląd elektrotechniczny, no. 2, 1964, 106-109

TOPIC TAGS: core plate varnish, synthetic resin, oil varnish, varnish curing, varnishing over, varnish adhesion characteristics, varnish dielectric characteristic, varnish aging, varnish environmental compatibility

ABSTRACT: The recent trend in the electrical machine industry is to insulate the iron laminations with material other than paper. This article deals in particular with the varnish method. From the manufacturing point of view, the most important requirement for good insulation is the feasibility of achieving uniform build-up thickness, 8-12 microns, by employing relatively low drying temperature (below 300C). Modern varnish products are based on synthetic resins made from thermosetting phenolic-formaldehyde resins modified by polyesters, or melamine, epoxy, isocyanide, silicon resins combined with thermoplastics. Uniform curing is achieved regardless of thickness, which is

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ACCESSION NR: AP4017876

one of the many advantages over oil varnishes. The reason for this is that drying is done by heat alone without surface oxydation. The adhesion characteristics of resin varnishes vary, epoxy and polyuretanes being the best as regards adhesion to metallic surfaces. The varnishing process consists in passing the laminations through the oven at a steady speed: first the solvent of the core plate evaporates, then the residue solidifies. This requires that the oven be divided into two zones, each held at a different temperature and separately ventilated. The curing time is much less for synthetic resin varnishes than for oil varnishes, thus the manufacturing cycle can be considerably shortened. The operation of the varnishing apparatus is more reliable at the lower temperatures required for synthetic varnishes. These factors and also the greater resistance to environmental conditions make the synthetic resins superior to oil varnishes. Extensive tests were made at the Zaklad Wysokich Napiec' Instytutu Elektrotechnicznego (High-Voltage Department of the Electrical Engineering Institute) and at the Instytut Farb i Lakierow (Institute of Paints and Varnishes) to determine and to compare the curing and the dielectric characteristics, also the effects of accelerated aging and major manufacturing factors. Two types of synthetic resin (enamels) and one type of oil varnish were studied for this purpose. In the evaluation of synthetics, the

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curing characteristics based on the control of adhesion at elevated temperatures are most essential; they determine the degree of thermoplasticity of the resin. Original article contains 9 diagrams.

ASSOCIATION: Instytut Elektrotechniki, Zaklad Wysokich Napieo (High-Voltage Department of the Electrical Engineering Institute);
Instytut Farb i Lakierow (Institute of Paints and Varnishes).

SUBMITTED: 00

DATE ACQ: 12Mar64

ENCL: 05

SUB CODE: CH, MA

NO REF SOV: 000

OTHER: 005

Card 3/8

LATOUR, J.

Supervision of the quality of measuring instruments; remarks and conclusions from a visit with the Soviet Bureau of Weights and Measures.

p. 333 (Pomiary, Automatyka, Kontrola) Vol. 2, no. 9, Sept. 1956, Warszawa, Poland

SO: MONTHLY INDEX OF EAST EUROPEAN ACCESSIONS (EEAI) LC, VOL. 7, NO. 1, JAN. 1958

POLAND/Nuclear Physics - Nuclear Power and Technology

C

Abs Jour : Ref Zhur Fizika, No 8, 1959, 17491

Author : Andrzejewski, S., Latour, J., Nowacki, P.J., Taube, M.,
Pomerski, R.

Inst : -

Title : The Perspectives of the Polish Nuclear Energy Program.

Orig Pub : Nukleonika, 1958, 3, Spec. Number, 1-10.

Abstract : No abstract.

Card 1/1

- 39 -

ALEKSANDROV, N., LATOV, B., POGOSTIN, S., PUSHKOV, I.

Regulation of work norms and wages of workers in the chemical
industry. Sots. trud no. 7:33-39 J1 '58. (MIRA 11:8)
(Chemical industries--Production standards)

LATOV, B.; MEL'NICHENKO, A.

Method for transferring chemical industry shops to the wage
groups of engineering and technical workers. Sots.trud no.12:
74-76 D '58. (MIRA 13:4)
(Chemical industries) (Wages)

L 9839-63

EPR/EWP(j)/EPP(c)/EWT(m)/BDS--AFPTG/ASD--Pg-l/Pc-l/Pr-l--

RM/LW/MAY

ACCESSION NR: AP3000395

S/0191/63/000/005/0011/0014

AUTHOR: Sorokin, M. F.; Latov, V. K.; Korkishko, Zh. T.; Kochnova, Z. A. 73

TITLE: Copolymers of unsaturated ethers of glycidol. Copolymerization of methyl methacrylate with allylglycidyl ethers in solutions

SOURCE: Plasticheskiye massy*, no. 5, 1963, 11-14

TOPIC TAGS: copolymerization, methyl methacrylate, 2-propenyl 2,3-epoxypropyl, copolymerization rate, reaction temperature, initiator concentration, reactivity ratios, yields, molecular weight, benzoyl peroxide

ABSTRACT: Methyl methacrylate (MMA) and 2-propenyl 2,3-epoxypropyl ether (PEPE) have been copolymerized in methyl ethyl ketone, dioxane, or toluene solution at 70 to 90C in the presence of 0.5 to 1.0 mol% of benzoyl peroxide or Alpha,Alpha-azobisisobutyronitrile. The reaction was conducted under nitrogen in solutions whose initial concentration of the monomers was 30%, with MMA and PEPE in ratios of 2:1, 1:1, and 1:2. The copolymerization rate dropped with an increase in the PEPE content and increased with an increase

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L 9839-63
ACCESSION NR: AP3000395

0
in the reaction temperature or initiator concentration. Because MMA is much more reactive than PEPE, the MMA-PEPE ratio in the copolymers is much higher than that in the initial monomer mixture. The monomer reactivity ratios were calculated to be 40.7 for MMA and 0.035 for PEPE. The copolymers, obtained in yields of 41 to 86%, are white solids readily soluble in benzene, toluene, acetone, or dioxane. Their molecular weights vary from 2000 to 10,000, decreasing with an increase in the initial PEPE concentration, reaction temperature, or initiator concentration. Copolymers prepared in dioxane solution have the highest molecular weight. Orig. art. has: 5 figures and 4 tables.

ASSOCIATION: none

SUBMITTED: 00

DATE ACQ: 10Jun63

ENCL: 00

SUB CODE: 00

NO REF SOV: 000

OTHER: 011

ja/se
Card 2/2

SOROKIN, M.F.; LATOV, V.K.

Application of the light diffusion method for determining the
molecular weights of polymers. Plast.massy no.6:49-51 '64.
(MIRA 18:4)

SOROKIN, M.F.; LATOV, V.K.

Ebulliometric determination of the molecular weight of polymers. Plast.
massy no.2:54-58 '65. (MIRA 18:7)

L 00890-66 EWT(m)/EPF(c)/ENP(j)/T WW/RM

ACCESSION NR: AP5020086

UR/0079/65/035/008/1471/1475
546.185.325 : 547.239.2 : 546.13

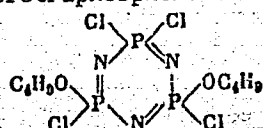
AUTHOR: Sorokin, M. F.; Latov, V. K.

TITLE: Synthesis of partial esters of phosphonitrilochloride trimer

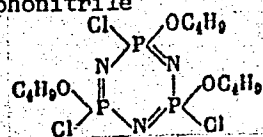
SOURCE: Zhurnal obshchey khimii, v. 35, no. 8, 1965, 1471-1475

TOPIC TAGS: ester, phosphonitrile, polymer, chlorinated aliphatic compound

ABSTRACT: Monobutoxypentachlorotriphosphonitrile, dibutoxytetrachlorotriphosphonitrile



and tributoxytrichlorotriphosphonitrile



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L 00890-66

ACCESSION NR: AP5020086

3
were synthesized from phosphonitrilochloride trimer and sodium butyrate using an alcohol-benzene solvent. The respective yields were 58.3, 50, and 48%. Boiling points, specific gravities, refractive indices, and chemical formulas were determined for all these compounds. Diphenoxytetrachlorotriphosphonitrile was synthesized, in the 60% yield, from phosphonitrilochloride and sodium phenolate using an alcohol-benzene solvent. The IR-spectra for these four compounds, taken with a UR-10 spectrophotometer, are shown in fig. 1 of the Enclosure. The degree of solvolysis (S) of sodium phenolate in reaction of the phosphonitrilochloride trimer with sodium phenolate as a function of the acidity of alcohol solvent (K_2) is shown in fig. 2 of the Enclosure. It was found that during solvolysis of sodium phenolate in alcohol, substitution with alkoxy-group takes place side by side with substitution with phenoxy-group. Orig. art. has: 2 figures and 1 table.

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskii institut im. D. I. Mendeleyeva
(Moscow Institute of Chemical Technology) 44, 55

SUBMITTED: 08Jun64

ENCL: 02

SUB CODE: GC, OC

NO REF SOV: 003

OTHER: 014

Card 2/4

I. 00890-66

ACCESSION NR: AP5020086

ENCLOSURE: 01

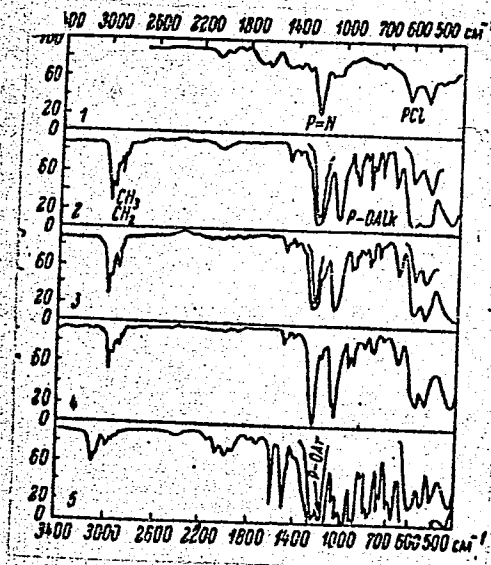


Fig. 1. IR spectra: 1--phosphonitrilo-chloride trimer (solid solution in KBr); 2--monobutoxypentachlorotriphosphonitrile; 3--dibutoxytetrachlorotriphosphonitrile (synthesized in butanol).

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L 00890-66

ACCESSION NR: AP5020086

ENCLOSURE: 02

0

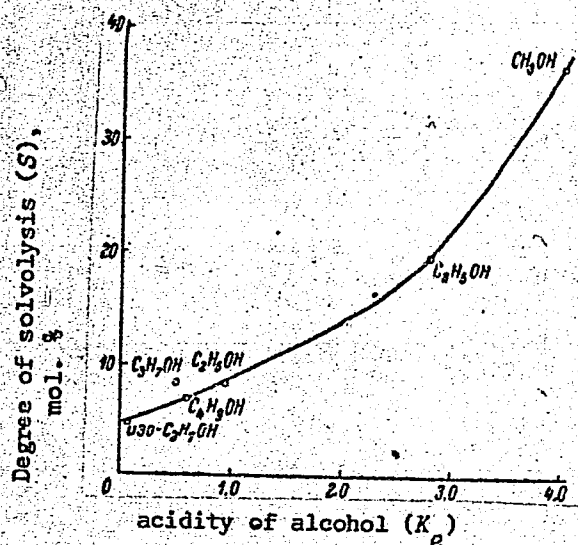


Fig. 2. Degree of solvolysis of sodium phenolate as a function of alcohol acidity.

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DP

L 29545-66 EWT(m)/EWP(j)/T IJP(c) RM

ACC NR: AP6007772 (N)

SOURCE CODE: UR/0195/66/007/001/0042/0048.

AUTHOR: Sorokin, M. F.; Latov, V. K.

ORG: Moscow Chemical Engineering Institute im. D. I. Mendeleev (Moskovskiy khimikotekhnologicheskii institut)

TITLE: Kinetics of the reaction of phosphonitrile chloride trimer with Na alcohates

SOURCE: Kinetika i kataliz, v. 7, no. 1, 1966, 42-48

TOPIC TAGS: phosphonitrile, ethanol, methanol, chloride, sodium compound, reaction rate

ABSTRACT: The kinetics of the reaction of phosphonitrile chloride (PNC) trimer and its incomplete butyl esters (monobutoxypentachlorotriphosphonitrile, dibutoxytetrachlorotriphosphonitrile, and tributoxytrichlorotriphosphonitrile) with sodium butoxide in butanol, sodium ethoxide in ethanol, and sodium methoxide in methanol were studied. The reaction is first order with respect to the PNC trimer, its esters, and the alkoxide ion, and zero order with respect to the alcohol. An

Card 1/2

UDC: 541.124 : 542.951.3

L 29545-66

ACC NR: AP6007772

increase in the dielectric constant of the medium was found to accelerate the reaction rate. An increase in the degree of substitution of chlorine atoms in the PNC trimer by butoxy groups sharply lowers the reaction rate, raises the activation energy, and leads to a decrease in the entropy of activation and the steric factor. A transitional state involving a change from the tetra- to the pentacoordination of phosphorus is proposed. Orig. art. has: 5 figures, 3 tables, and 6 formulas.

SUB CODE: 07/ SUBM DATE: 12May64/ ORIG REF: 004/ OTH REF: 014

Card 2/2 *fv*

E 05333-01 (N) SOURCE CODE: PO/0099/66/040/002/0231/0235
ACC NR: AP7000228

LATONSKI, T., of the Department of Physical Chemistry, Teachers College
(Katedra Chemii Fizycznej Wyzszej Szkoły Pedagogicznej), Gdansk.

"Photochemical Properties of Aniline Haloderivatives. III. Photo-
lysis of Chloroanilines in Methanolic Solution"

Warsaw, Roczniki Chemii, Vol 40, No 2, 1966, pp 231 - 235

Abstract (Author's English abstract): Quantum yields of formation of chlorine
ions upon photolysis of methanolic solutions of several chlorinated anilines
as well as of some chlorobenzene derivatives having various substituents in
the para position were investigated. The author thanks L. Debicka for carrying
out part of the experimental research. Orig. art. has: 1 table and 2 formulas.

TOPIC TAGS: nonmetallic organic derivative, photochemistry, chlorinated organic
compound, photolysis

SUB CODE: 07 / SUBM DATE: 02 Feb 63 / ORIG REF: 004 / OTH REF: 011

YH

Card 1/1

LATUKHIN, A., inzh.- polkovnik

Operational-tactical missiles. Voen, znan. 42 no.1:36-37 Ja '66.
(MIRA 19:1)

LATOVA, Zofie
HOUBAL, Vaclav, Primar MUDr (Brno-Lisen, Namesti 18); LATOVA, Zofie,
As. MUDr (Brno-Reckovice, Dlouhe hony 10)

Experience with the treatment of acute hepatic dystrophy. Lek.
listy, Brno 9 no.15-16:365-369 1 Aug. 54.

1. Z V. vnitřního a infekčního oddělení KUNZ, fakultní nemocnice
v Brně-Bohunicích. Přednosta primar MUDr V.Houbal.

(LIVER, diseases,
necrosis, ther.)

(NECROSIS,
liver, ther.)

S/081/63/000/001/031/051
B144/B186

AUTHORS: Szychliński, Jerzy, Karczyński, Feliks, Latowska,
Elżbieta, Pawlak, Zenon

TITLE: Some data on chloro-plumbic acid

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 1, 1963, 111-112,
abstract IV5 (Roczn. chem., v. 36, no. 4, 1962, 771-773
[Pol.; summary in French])

TEXT: It is established that chloro-plumbic acid has the composition
 $H_2PbCl_6 \cdot nH_2O$ (I) when obtained by the method described previously
(Friedrich H. "Ber.", 1893, 26, 1434). The acid I dissolves in HCl, but
poorly in CH_3OH and C_2H_5OH , and not at all in C_6H_6 and CCl_4 . With
organic solvents, I cannot be extracted from hydrochloric solutions; this
proves the absence of $PbCl_5$ in these solutions. [Abstracter's note;
Complete translation.]

Card 1/1

SZYCHLINSKI, Jerzy; KARCZYNSKI, Feliks; LATOWSKA, Elzbieta; PAWLAK, Zenon

Some remarks on chloroplumbic acid. Roczniki chemii 36 no.4:
771-773 '62.

1. Katedra Chemii Fizycznej, Wyzsza Szkola Pedagogiczna, Gdansk.

LATOESKI, Jozef, mgr inż.

Now terminology in refrigeration engineering. *Prace Instytutu* 66.
no. 5:6 31. Ja 1965.

1. Refrigeration Engineering Center, Krakow.

LATOWSKI, T.

27 27 4
/ Photometric investigations of the $Pb^{4+}-Cl^-$ system.
Jerzy Szychliński and Tadeusz Latowski (Wyższa Szkoła
Pedagogiczna, Gdańsk, Poland). *Kochem.* 32,
937-1004 (1958) (French summary).—Curves of absorption
of visible light of several aq. and nonaq. solns. of Pb^{4+}
and Cl^- ions were detd. A qual. discussion is given.
A. Kreglewski

LATOWSKI, T.

27 27

Equilibrium in the $Pb^{++}-Cl^-$ system. Jerzy Szuchliński, Tadeusz Latowski, and Ryszard Korewa (Wyższa Szkoła Pedagogiczna, Gdańsk, Poland). *Roczniki Chem.* 32, 1013-23 (1958) (French summary).—Soly. of chloroplumbates (I) of K, NH₄, ethylamine, quinoline, and 8-hydroxyquinoline in acidic solns. contg. equimol. concns. of Cl⁻ ions was detd., and found to decrease with increasing size of the cation, and with increasing concn. of added electrolytes (HCl, NaCl, KCl). The equil. Pb^{++}/Pb^{+} was studied in presence of HCl (aq.) and Cl₂ (1 atm.) at 10-50°. $K_1 = c_{Pb^{++}}/c_{Pb^{+}} = 0.24$ and $K_2 = c_{Pb^{++}}c_{Cl_2}/c_{Pb^{+}}c_{HCl} = 4.3 \times 10^{-4}$ at HCl concn. equal to 10.02 moles/l. and 20°. K_2 is independent of HCl concn. Both consta. increase with temp. The lack of stability of $Pb^{++}-Cl^-$ systems is due to escape of gaseous Cl. A. Krogulewski

3/058/63/000/001/062/120
A160/A101

AUTHORS: Basiński, Antoni, Latowski, Tadeusz

TITLE: The photochemical properties of halogen-derivative anilines. I.
A. photolysis of iodine-derivative anilines $J - C_6H_4 - R$
($R = NH_2$, $-NH - CO - CH_3$ and NH_3^+) in methanol solution

PERIODICAL: Referativnyi zhurnal, Fizika, no. 1, 1963, 61, abstract 1D434
("Roczn. chem.", no. 3, 1962, 36, 513 - 520, Polish; summaries
in Russian, English and German)

TEXT: An investigation was carried out of the rate of the photochemical
process of separating iodine from the benzene ring in the presence of the follow-
ing groups: $-NH_2$, $-NH - CO - CH_3$ and $-NH_3$ in methyl alcohol solutions. An
attempt was made to compare the results of the photolysis with the ultraviolet
absorption spectra.

[Abstracter's note: Complete translation]

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S/081/63/000/001/024/061
B144/B186

AUTHORS: Basiński, Antoni, Latowski, Tadeusz

TITLE: Photochemical properties of halogen derivatives of aniline.
I. Photolysis of iodine derivatives of aniline $\text{IC}_6\text{H}_4\text{R}$
($\text{R} = \text{NH}_2$, NHCOCH_3 , and NH_3^+) in solutions of methyl alcohol

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 1, 1963, 90, abstract
1B626 (Roczn. chem., v. 36, no. 3, 1962, 513-520 [Pol.;
summaries in Russ., Eng., and Germ.])

TEXT: The photolysis rate of $\text{C}_6\text{H}_4\text{R}$, where $\text{R} = \text{NH}_2$ (I), NHCOCH_3 (II) and NH_3^+ , under the effect of Hg lamps was studied in CH_3OH solutions and in $\text{CH}_3\text{OH}-\text{H}_2\text{SO}_4$ mixtures. For para- and meta-I the photolysis rate is almost the same, for ortho-I it is 24% higher. From the UV spectra it is evident that the photolysis rate increases when the energy of the main electron transition (K band) of the isomers of I and II decreases. This energy reduction is greater, the higher the polarity of the molecule. ✓

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Photochemical properties of ...

S/081/63/000/001/024/061
B144/B186

Light absorption in the 2500-2800 Å region is due to the electrons of the C-I bond (or to the I electron) and not to the electrons of the benzene ring. [Abstracter's note: Complete translation.]

Card 2/2

LATOWSKI, Tadeusz; BASINSKI, Antoni

Photochemical properties of halogenous derivatives of aniline.
Pt. 2. Roczniki chemii 37 no.3:341-346 '63.

1. Department of Physical Chemistry, Normal School, Gdansk, and
Department of Physical Chemistry, N. Copernicus University,
Torun.

LATRANYI, Jeno

Geometric delivery of gear-wheel pumps. Gep 16 no. 2:
57-61 F '64.

1. Budapesti Muszaki Egyetem Vizgepek Tanszeke. Tanszekvezeto:
Dr. Varga Jozsef egyetemi tanar.

LATRYGIN, S.

Greater capacity of planning tools, p. 188, STROJIRENSKA VYROBA
(Ministerstvo strojirenství) Praha, Vol. 3, No. 5, May 1955

SOURCE: East European Accessions List (EEAL) Library of Congress,
Vol. 4, No. 12, December 1956

LATS, V.M.; VILENSKIY, N.M., otv. red.

[Fuel-power balance in ferrous metallurgy enterprises; a matrix model] Toplivno-energeticheskii balans predpri-
iatiia chernoi metallurgii; matrichnaia model'. Sverdlovsk,
AN SSSR Ural'skii filial, 1965. 38 p. (MIRA 18:4)

VASIL'YEV, M.V.; V'YUKHINA, A.S.; DORONENKO, Ye.P.; ZEBZIYEV, K.V.,
kand. tekhn. nauk; LATS, V.M.; PARFENOV, G.V.; POPOV,
V.Ye.; TROITSKIY, D.P.; FADDEYEV, B.V.; TSVETAYEVA, Z.N.;
ZUERILOV, L.Ye., kand. tekhn. nauk, otv. red.; MAKAROVA,
N.U., red.; PAL'MIN, M.Z., tekhn. red.

[Evaluation and the prospects of the development of the
mineral resources for ferrous metallurgy in Chelyabinsk area]
Otsenka i perspektivy razvitiia syr'evoi bazy chernoi metal-
lurgii Cheliabinskogo raiona. Sverdlovsk, AN SSSR, 1964. 67 p.
(MIRA 17:4)

LATS, V.M., inzh.

Fuel and power balance of ferrous metallurgy plants. Prom. energ.
19 no.5:5-8 My '64. (MIRA 17:6)

KUNCHULIYA, V.G.; BALUASHVILI, A.A.; NIORADZE, T.N.; LATSABIDZE, L.L.

Effect of exercise therapy on the restoration of impaired coordination of movements in some forms of neurasthenia (with vestibulopathy). Trudy Tbil.GIDUV 6:203-210 '62.

(MIRA 16:2)

(EXERCISE THERAPY)

(NEURASTHENIA)

KONCHULIYA, V.G.; BALUASHVILI, A.A.; LATSABIDZE, L.L.

Effect of exercise therapy on the restoration of the functions
of the wrist in traumas of the radiocarpal joint. Trudy Tbil.

GIDUV 6:211-216 '62.

(MIRA 16:2)

(EXERCISE THERAPY) (WRIST--WOUNDS AND INJURIES)

DZIDZIGURI, A.A.; ONIANI, Sh.I.; LATSABIDZE, T.O.

Effect of the relief of the temperature field of the interior
of Tkibuli-Shaori coal deposit. Soob. AN Gruz. SSR 32 no.3:
611-618 D '63. (MIRA 17:11)

1. Institut gornogo dela imeni G.A. TSulukidze AN GruzSSR.
2. Chlen-korrespondent AN GruzSSR (for Dzidziguri).

DZIDZIGURI, A.A.; ONIANI, Sh.I.; LATSABIDZE, T.G.

Using the method of electric simulation in investigating geothermic conditions of the Komsomol'skaia Mine of the "Tkibulugol'" Trust.
Soob. AN Gruz. SSR 35 no.2:387-394 Ag '64.

(MIRA 17:12)

1. Institut gornogo dela imeni G.A.TSulukidze, A" Gruzinskiy SSR, Tbilisi. 2. Chlen-korrespondent AN Gruzinskoy SSR (for Dzidziguri).

DZIDZIGURI, A.A., prof., doktor tekhn.nauk; ONIANI, Sh.I., kand.tekhn.nauk;
LATSABIDZE, T.O., gornyy inzh.

Investigating the thermal conditions of a deposit by the electro-
thermal analogy method. Ugol' 40 no.3:51-61 Mr '65.

(MIRA 18:4)

1. Institut gornoy mekhaniki, razrabotki mestorozhdeniy i fiziki
vzryva AN Gruzinskoy SSR.

LATSH, V. V.

Chemical Abst.
Vol. 48 No. 4
Feb. 25, 1954
Electronic Phenomena and Spectra

X-ray analysis of the structure of aluminum and brass L-70 in the processes of compression and recovery. S. O. Tsobkhallo and V. V. Latsh' (M. I. Kalinin Polytech. Inst., Leningrad). *Izv. Akad. Nauk S.S.S.R. Ser. Fiz.* 17, 373-80 (1953). — The samples of the compn. Al 99.67, Si 0.13, Cu 0.03, Fe 0.17% and brass Cu 70.09, Zn 28.95, Pb 0.98%, and Fe traces were formed into cylinders 25 mm. high and 15 mm. in diam. The Al compn. was fired for 3 hrs. at 250°, the brass at 400°. The Al compn. was flattened by 5, 11, 16, 35, 55, and 80%, the brass by 5, 9, 17, 20, 40, and 50%. Such samples were fired at different temps. for 1 hr. and also at const. temp. for different periods. Rockwell hardness was measured and x-ray pictures of Cu radiation were examd. for scattering of lines, indicating deformations of second and third kind. The intensity of the 511 line (Al) drops linearly as a function of the deformation. Both intensity and hardness recover by annealing for 1 hr. at temps. >180°. Intensity can be represented as a function of Rockwell hardness by a curve. In brass the width of line 420 increased linearly to 20% deformation; then the width remained const. to 40% and increased again above that. Upon annealing hardness increased to a max. at 230-240°, beyond which temp. rapid recovery set in. From isothermic annealing tests it is shown that deformations of the 3rd kind are not completely lifted by annealing in recrystd. parts. This increase in hardness in brass is attributed on the basis of microscopic observation of gliding planes to a chem. inhomogeneity leading to a sepn. of a β phase with higher Zn content. The results are discussed and the assertion is made that in pure metals hardening is due to deformations of the third kind, whereas in alloys hardening is due both to deformations of the lattice and to changes in phase structure.

S. Pakswer

Latsh, V.V.

AUTHORS: Petrova, N.A., Shashin, M.Ya., Latsh, V.V.

32-11-40/60

TITLE: The Application of the Method of X-Ray Structural Analysis for the Investigation of Changes in the Upper Layers of the Metal by the Method of Scrap Slinging (Primeneniye metoda rentgenostrukturnogo analiza dlya issledovaniya izmeneniy v poverkhnostnykh sloyakh metalla pri drobemetnom naklepe)

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol. 23, Nr 11, pp. 1372-1374 (USSR)

ABSTRACT: This method of studying processes occurring in steel while being worked to sorbite steel by means of the scrap slinging process was investigated. The attempt was made to determine the depth and the degree of the plastic deformation occurring on this occasion. The samples were produced from chromium-molybdenum steel (0.33% C; 1.11% Gr; 0.35% Ni; 0.18% Mo), which was first hardened and then annealed to sorbite. The scrap slinging treatment was carried out in different ways by application of the device "Д.У -60", and the following expression was obtained by simplified parameters:

scrap velocity: v in $\frac{m}{sec}$ with a specific scrap energy of $M \frac{m}{m^2} [4.5]$.

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X-ray investigation of the samples was carried out in a special

32-11-40/60

The Application of the Method of X-Ray Structural Analysis for the Investigation of Changes in the Upper Layers of the Metal by the Method of Scrap Sliding

camera with neutral intensity standard. The camera was arranged in such a manner that on one film the required interference line -Fe and the standard line were recorded. For the purpose of controlling the work performed, pictures of the sample in its original state were inserted after every 7-8 X-ray pictures. X-ray photographs were photometrized on the microphotometer "Mφ -2". X-ray pictures were taken of the surface of the samples as well as of various parts located at different depths from the surface. Decrease of the layer of metal was brought about by etching in a 50% H₂SO₄ solution at an amperage of 0.25-0.30 A/cm², which was micrometrically recorded. In the course of work the values:

$M = 60-100 \frac{\mu m}{m^2}$ and accordingly the value $\frac{I}{I_{standard}} = 1.6 - 1.4$ was

computed. At the same time it was found that the curve of the ratio $\frac{I^2}{I_{standard}}$, which is connected with an increase of the intensity of the

manner of working which, in turn, is accompanied by an increase of deformation, leads to a critical moment for the parameter value

Card 2/3

32-11-40/60

The Application of the Method of X-Ray Structural Analysis for the Investigation of Changes in the Upper Layers of the Metal by the Method of Scrap Slings

M at $60-100 \frac{\text{tm}}{\text{m}^2}$, and that the deformation (of third degree) towards the inside of the sample decreases rapidly, so that at $\sim 0.15-0.19 \text{ mm}$ the value $\frac{I_{112}}{I_{\text{standard}}}$ hardly differs at all from the original value.

On the strength of the results obtained it was found that the value $\frac{I_{112}}{I_{\text{standard}}} = 1.6 \pm 1.4$ on the surface of the sample and, accordingly, $M = 60 \div 100 \frac{\text{tm}}{\text{m}^2}$ are to be considered as criteria for the optimum

manner of processing in the scrap-slinging process applied to chromium molybdenum steel (with $R = 28 \div 32$ of the initial thermal treatment). The application of the harder working methods may cause micro-cracks and other damage to the material, and may also diminish the limit of metal fatigue. There are 4 figures and 5 Slavic references.

AVAILABLE: Library of Congress
Card 3/3

S/181/60/002/007/045/047/XX
B006/B067

AUTHORS: Latsh, V. V., Minayev, N. G., Somin, B. Kh. ✓ ✓ ✓
TITLE: X-Ray Study of the Phase Composition of Ni-Zn Ferrites by
Using CoK_α Radiation
PERIODICAL: Fizika tverdogo tela, 1960, Vol. 2, No. 7, pp. 1632-1642

TEXT: The use of the emission of an iron anticathode for analyzing the phase of Ni-Zn ferrites proved to be inadequate since it renders the determination of NiO or of the solid solution of ZnO in NiO difficult or impossible because the lines of NiO and the spinel coincide. If harder (monochromatized) Co-K_α radiation is used, this disadvantage is not observed; the X-ray pictures show two additional intensive interference lines of NiO with the indices (133) and (420), and the Bragg angles 69° and 74° , respectively. An X-ray tube of the type 5CB-4 (BSV-4) (time of exposure 10 hours; 10 ma, 35 kv) was used for taking the Debye powder patterns. Mixed oxides with an NiO:ZnO ratio of 0.35 - 1.1 and an Fe_2O_3 content of 45-55.0 mole% were studied. By means of Co-K_α radiation, interference lines could also be observed at the following concentrations:

Card 1/3

X-Ray Study of the Phase Composition of Ni-Zn S/181/60/002/007/045/047/XX
Ferrites by Using CoK_α Radiation B006/B067

NiO (0.5 wt%), ZnO (2.0 wt%), Fe_2O_3 (2.0 wt%). The results of the investigations are illustrated by means of X-ray diagrams, tables, and microstructural pictures, and they are summarized as follows: 1) With Co-K_α radiation NiO or ZnO can be determined in Ni-Zn ferrites and NiO, respectively by means of interference lines. 2) During the ferritization process, in the case of stoichiometric composition, no formation of solid ZnO solutions in NiO was observed. The formation of Zn ferrite in the synthesis from oxides ceases at a temperature of 900°C , the ferritization of nickel ferrite ceases at 1100°C . 3) A rise of the annealing temperature of ferrite mixtures with a low content of iron oxide over 900°C leads to a substitution reaction between the excess NiO and the Zn ferrite which brings about a change in the ratio between divalent Ni and Zn ions in the ferrite lattice. 4) Zinc oxide and nickelous oxide form solid substitution solutions with conservation of the Ni-O crystal lattice; the lattice parameter practically increases linearly with increasing ZnO content (see Fig. 3 and Table 3). The solubility limit of ZnO and NiO amounts to about 50 wt% at an annealing temperature of 1350°C . If this temperature is reduced to 900°C the solubility limit of ZnO is reduced to ~30 wt%. A change in the solubility of ZnO in NiO could not be observed on a further

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 Ferrites by Using CoK_α Radiation B006/B067

temperature increase; this is connected with the strong decrease of the diffusion rate. 5) In Ni-Zn ferrites with less than 50 mole% of Fe_2O_3 , NiO and ZnO excesses exist which form solid solutions. The formation of a solid ZnO solution in NiO was observed after the termination of zinc ferritization. B. Ye. Levin is mentioned. There are 8 figures, 3 tables, and 11 references: 9 Soviet and 1 US.

SUBMITTED: July 22, 1959

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B004/B056

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AUTHORS:

Latsh, V. V., Minayev, N. G., Somin, B. Kh., Stepina, N.E.

TITLE:

Dissolution of Excess Iron Oxide in Ni-Zn Ferrite A

PERIODICAL: Fizika tverdogo tela, 1960, Vol. 2, No. 9, pp. 2191 - 2198

TEXT: For the purpose of explaining the contradictory published data concerning the solubility of Fe_2O_3 in ferrites, the authors carried out the following experiments: Ni-Zn ferrites with a content of 50-95 mole% Fe_2O_3 and an NiO/ZnO ratio of from 0.43 to 4.0 were synthesized from the oxides, were briquetted after the addition of polyvinyl alcohol as a binding agent, annealed for 4 h at 1000-1350°C, after which they were either slowly cooled (100°C/h) in a furnace or quenched with air or water. Besides, they were also slowly cooled under oxygen deficiency (0.7 to 0.35 torr). Fig. 1 shows the results obtained by chemical analysis: The quantity of Fe_2O_3 converted into magnetite as a function of the Fe_2O_3 content and the cooling conditions; Fig. 2 shows the quantity

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Ferrite

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of Fe_2O_3 converted into magnetite as a function of the annealing temperature. The quenched samples were found to have the highest magnetite content. The Fe_2O_3 excess dissociates to form magnetite, and together with the ferrite it forms solid solutions of iron-nickel-zinc ferrite of stoichiometric composition. When slowly cooled in air, the magnetite is oxidized to $\gamma\text{-Fe}_2\text{O}_3$ or $\alpha\text{-Fe}_2\text{O}_3$. The latter separates as the second phase. Figs. 3-6 (microphotographs) confirm this process. The quenched samples form a homogeneous phase, while the slowly cooled samples have two phases because of the separation of hematite. X-ray analysis (Fig. 7) shows that the lattice constant of quenched samples approaches that of magnetite (8.38 kX), whereas Fe_2O_3 formed by oxidation reduces the lattice constant (8.32 kX at 100 mole% Fe_2O_3). Fig. 8 shows the temperature of the dissociation of Fe_2O_3 to Fe_3O_4 , as a function of the Fe_2O_3 content. For pure Fe_2O_3 , the dissociation temperature is 1450°C , and in the system

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Ni-Zn-ferrite - Fe_2O_3 , it approaches the value of 900°C with decreasing iron-oxide excess. There are 8 figures and 23 references: 11 Soviet, 4 US, 2 British, 3 German, and 1 French.

SUBMITTED: October 26, 1959

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LATSH, V. Y.

PHASE I BOOK EXPLOITATION

SOV/4893

Vsesoyuznaya soveshchaniye po fizike, fiziko-khimicheskim svoystvam ferritov i fizicheskim osnovam ikh prikladnykh. 34, Minsk, 1959
 Ferrity; fizicheskiye i fiziko-khimicheskiye svoystva. Doklady (Reports) na fiziko-khimicheskom simpoziume. Minsk, Izd-vo AN BSSR, 1960. 655 p. Errata slip inserted.
 3,000 copies printed.

Sponsoring Agencies: Nauchnyy sovet po magnetizmu AN SSSR. Otdel fiziki tverdogo tela i poluprovodnikov AN BSSR.

Editorial Board: Resp. Ed.: M. N. Sirota, Academician of the Academy of Sciences BSSR; K. P. Belov, Professor, Leningrad University, Professor; K. M. Polivanov, Professor, Leningrad University; G. A. Smolenskiy, Professor; M. M. Shol'ts, Candidate of Physical and Mathematical Sciences; E. M. Solov'yenko, and Z. A. Zaslavskiy; Ed.: Z. A. Zaslavskiy, Tech. Ed.: L. Polonovskiy.

FORWORD: This book is intended for physicists, physical chemists, radio electronics engineers, and technical personnel engaged in the production and use of ferromagnetic materials. It may also be used by students in directed courses in radio electronics, physics, and physical chemistry.

CONTENTS: The book contains reports presented at the Third All-Union Conference on Ferrites held in Minsk, Belorussian SSR. The reports deal with magnetic transformations, electrical and galvanomagnetic properties of ferrites, studies of the growth of ferrite single crystals, problems in the chemical and physicochemical analysis of ferrites, studies of ferrites having rectangular hysteresis loops and multicomponent ferrite systems exhibiting spontaneous rectangularity, problems in magnetic interaction of ferrite particles, magnetic spectroscopy, ferrite films, ferrite composites, problems in the synthesis of ferrite components in electrical circuits, analysis of electrical and magnetic properties, etc. The Committee on Magnetism, AS USSR (S. V. Vonsovskiy, Chairman) organized the conference. References accompany individual articles.

Ferrites (Cont.)

SOV/4893

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ACCESSION NR: AR4018314

S/0137/64/000/001/G036/G036

SOURCE: RZh. Metallurgiya, Abs. 1G251

AUTHOR: Somin, B. Kh.; Gorbachevskiy, Ye. V.; Latsh, V. V.; Minayev, N. G.

TITLE: The influence of nickel on the sinterability of pressed powders of tungsten and molybdenum

CITED SOURCE: Tr. Kuyby'shevsk. aviats. in-t, vy*p. 16, 1963, 141-148

TOPIC TAGS: powder metallurgy, nickel, tungsten, molybdenum, material strength, heat-treatment

TRANSLATION: Research was conducted on the influence of Ni on sintering in an atmosphere of H_2 and in vacuum Mo and W in a range of 1,100-2,000 degrees for Mo and 1,100-2,500 for W, with a nickel content of 0.01-10% by weight. Density (P), microstructure, microhardness, and the parameters of the crystal network of the first phase were studied. An increase in the density of the sintered Mo with an inclusion of 0.5-1% Ni takes place as low as 1,100 degrees. At 1,300 degrees, the porosity of the samples with the above nickel content amounts to 10%. At 1,500 degrees, the effectiveness of the influence of small inclusions of Nickel on the sinterability

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ACCESSION NR: AR4018314

of Mo decreases considerably. The curves of function P of sintered W with the nickel content has a maximum equal to a 0.25% nickel content. After sintering at 1,500 degrees, the W with an admixture of 0.25-0.5% nickel amounts to 5-7%. The inclusion of nickel also leads to an increase in the microhardness of W from 250 to 600 kg/sq cm, and the microhardness of Mo from 150 to 500 kg/sq cm. The liquifiability of nickel at 1,500 degrees is 0.3 atmospheric % in W and 1 atmospheric % in Mo. At sintering temperatures of 1,350 degrees for Mo, and 1,495 degrees for W, and a nickel content greater than 0.5% for Mo and 0.25% for W, an oozing out of the Nickel phase is observed, accompanied by a decrease in hardness of the samples during sintering in H_2 .

SUB CODE: MM

ENCL: 00

Card 2/2

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(ALDEHYDES toxicol.)

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Some features of peacetime tetanus. Vrach.delo supplement '57:68-69
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